

Le Jélin of Adanson.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—In the ‘*Annales des Sciences Naturelles : Zoologie,*’ 4^{me} série, vol. xv. pp. 369–374 (1861), I published a note on the Jélin of Adanson and the genus *Pleurodictyon* of Goldfuss.

During my visit to Cette last summer, I had the opportunity, through the kindness of M. Dumel-Adanson, the present possessor of the collection of Adanson, of examining the typical specimen of le Jélin in the ‘*Histoire Naturelle du Sénégal.*’ I ascertained that it was not provided with any internal *calcareous* tubes, and that its structure was unlike that of any coral or shell or Bryozoon. It showed, on the contrary, in this latter respect a great resemblance to *Myriosteon Higginsii*, Gray, which I had the opportunity of examining in the British Museum through the kindness of Dr. Günther. Notwithstanding its very different shape, I suspect that this enigmatical body may prove to belong to some part of a cartilaginous fish.

I am, Gentlemen,

Your most obedient Servant,

O. A. L. MÖRCH.

Copenhagen, April 2, 1871.

On the Action of the so-called Poisonous Shadow of various Tropical Plants. By PROFESSOR KARSTEN.

The author in the first place reported his experience of the properties of the Manchineel tree (*Hippomane manzanilla*, Linn.), which, like some other Euphorbiaceæ, Anacardiaceæ, and Artocarpeæ, is so much dreaded by the natives of the regions in which this plant is indigenous, that no one will approach it unnecessarily or stay any time in its vicinity; for it is generally known that the comfort of repose in the cool shade of this thick-foliaged evergreen tree is paid for with painful inflammations, and, in persons of irritable constitution, even with death. Nevertheless, at present, naturalists regard this dread as exaggerated, especially since Jacquin stated that during a storm of rain he remained naked for several hours under an *Hippomane* without the smallest injurious consequences. The author remembered this statement of Jacquin’s when he met with fine examples of the Manchineel on the coast of Venezuela, near La Guayra (on the sugar-plantation of Naguayata), and did not hesitate to carry out his desire of collecting some of the milky juice of this tree in order to investigate its constituents. This occupation, however, which lasted for several hours, was speedily followed by a burning sensation over the whole body, associated with a swelling of the moister parts of the skin, particularly the face, and especially the eyes. On the next morning the eyes were almost completely closed up, and at the same time so irritable that Karsten had to stay for some days in a perfectly dark room. After the lapse of three days the swelling diminished, and the epidermis began to separate.

This *Hippomane*, therefore, secreted a volatile matter which was taken up by the moist skin in a dry atmosphere, and being absorbed by the mucous membranes and sudorific glands caused them to become diseased; Jacquin, on the contrary, detected nothing of the kind, because the gaseous secretion was taken up by the rain-water, and thus rendered innocuous to his body.

The wood of this *Hippomane* also apparently contains a similar volatile matter; at least its combustion causes similar morbid phenomena, especially inflammation of the eyes.

Like the Manchineel, some other Euphorbiaceæ and Anacardiaceæ, especially species of the genus *Rhus* (e. g. *R. juglandifolia*), are dreaded in South America. Of the latter the author was also told that people have died of the cutaneous sores which were produced in consequence of the action of its shadow, *i. e.* its gaseous emanation.

The author finds an analogue of this deleterious exhalation of the *Hippomane* in the volatile organic bases, such as trimethylamine, and he thinks that such nitrogenous volatile compounds (substitution-products of ammonia) are more generally diffused than we suppose. They have probably been overlooked in the analysis of the gases exhaled from living plants, because they were attracted and retained by the water which the apparatus usually contains. In all the plants which Karsten has investigated for this purpose, in germinating Leguminosæ (lentils, peas, lupines), in the development of buds on trees and shrubs (*Æsculus*, *Syringa*, *Cratægus*, *Prunus*, *Pyrus*, *Viburnum*) and on tubers (*Helianthus*, *Solanum*), in fungi, &c. he detected volatile ammoniacal compounds, some of which rendered turmeric paper faintly brown, when he placed very dilute pure sulphuric acid upon the bottom of the air-tight receivers, shut off by acids, which contained these plants, left it there for a few days, and then mixed it with Nesler's reagent.

As the tissue of the above-mentioned plants at the same time always has an acid reaction, it is not probable that this volatile nitrogenous compound is merely ammonia or an ammonical salt; but this further investigations must settle.

His anatomical results led Karsten to the belief that these volatile and, in part, basic nitrogenous compounds originate during the transformation of the neutral proteine materials (which occur as thick-walled content-celles in the tissue-cells of the organs) into acid compounds which permanently redden blue litmus-paper, whilst new generations of cells make their appearance in these cellules.

The oxygen which is taken up during this vegetative process by the embryos, buds, fungi, &c. which exhale this gaseous matter, probably belonging to the amide series, in combination with carbonic acid, would therefore not, as has hitherto been supposed, serve to convert certain carbon-compounds of the seed &c. directly into carbonic acid and water, but, in the author's opinion, the oxygen would rather act first of all upon the proteine materials present, which would thus be oxidized, dissolved, and converted partly into viscid compounds, dissolving the hydrates of carbon, fat, &c. (*dia-*

stase), and partly into gaseous compounds decomposed by contact with the air into carbonic acid and these ammoniacal derivatives.

The surprising circumstance that the plant should in this way give off as an excretion a part of its scanty supply of nitrogen loses its improbability, as the author remarks, when we know that the tips of the roots usually have an acid reaction, and that the ammoniacal derivatives carried down by water into the soil are again taken up by them.

Karsten expresses a hope that a thorough study of these conditions will elucidate many phenomena which are still obscure and inexplicable,—for example, the penetration of many germinating parasitic fungi into particular organs of plants, particularly such as the developing embryos of more highly organized plants, and their leaf- and flower-buds—and the finding of the fissures of these organs by the germinal mycelium of the fungus, which not unfrequently takes place—further, the finding of the micropyle of atropal ovules projecting freely into the cavity of the ovary by the pollen-tube; for probably each of these organs exhales a specifically peculiar compound which serves as the first nourishment of some one definite kind of growing fungal germ or pollen-tube, and guides it to the place of its subsequent development.—*Zeitschr. des allgem. österr. Apotheker-Vereines*, No. 11, 1871. Communicated by the Author.

A new Genus of the Eolididæ. By Prof. SALVATORE TRINCHESE.

Prof. Trinchese, of Genoa, has described a new form belonging to the family Eolididæ, obtained upon seaweeds in the port of Genoa, in May 1869. He regards it as forming a new genus most nearly allied to *Hermæa*, Lovén, but also presenting considerable affinity to the genera *Phyllbranchus*, Bergh, and *Chiorocera*, Gould. He characterizes it as follows, under the name of

BECCARIA.

Corpus elongatum, subcompressum, postice attenuatum. *Caput* distinctum, utrinque in lobum planum extensum. *Podarium* latum, angulis anterioribus acutis, paullulum productis. *Branchiæ* numerosæ, foliaceæ, seriebus minus distinctis ad latera dorsi dispositæ. *Rhinophoria* (superior tentacles) longa, foliacea, convoluta. *Foramina generationis* (et ani?) ad dextrum latus. *Maxillæ* nullæ. *Radula* dentibus validis non denticulatis prædita.

The genus is named in honour of Prof. Beccari.

For the species he proposes the name of *Beccaria tricolor*; it is of a delicate green colour throughout, but covered with small globules of a splendid white and deep carmine-red colour. These extend also to the tentacles and branchial leaves. The white globules form a transverse band across the anterior margin of the body and another immediately in front of the pericardial sac. On the dorsal surface of the latter they are arranged in little round groups circumscribed and separated by red globules; and a similar arrange-